

REMARKS

Changes in response to the Examiner's Detailed Action are described in remarks hereinbelow.

Disclosure Objection

1. The disclosure is objected to because of an informality wherein the application number of the co-pending application should be added. The first paragraph on page 1 is suitably amended

Claim Rejections

Claims 2-5, 7-15, 19 and 21 are now pending in the referenced application.

Claim Rejections - 37 CFR 1.75(c) & 35 USC 112

2. Claims 14 and 15 are objected to under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. The claims are amended to provide appropriate limitations on the mold cited in the independent claim, such limitations being obviously related to the tire beads described in the original claims 14 and 15.

Claim 14 has text inserted to limit the outside diameters of the first and second bead molding rings with reference to a tire to be molded that has asymmetric bead diameters. In order to distinguish first and second bead diameters from the first and second diameters of the bead molding rings, the word "bead" is appropriately inserted in three places. Although the re-wording of the claim should be obvious from the original language, further support may be obtained with reference to Figures 1 and 2 and page 12, lines 3-9.

Claim 15 has text inserted to claim a shape of the bead molding rings with respect to the originally cited tire bead shapes.

3. Claim 12 is rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 12 is amended to distinctly claim the metes and bounds of the claimed apparatus structure. The phrase "functionally the same as" is replaced by "structurally equivalent to", and then the description of the retractable first bead molding ring is copied from the independent claim (claim 7, amended as described hereinbelow) with the word "first" being replaced by the word "second" wherever appropriate.

Claim Rejections - 35 USC 102(b) and 103(a)

6. Claims 1-12 and 15-20 have been rejected under 35 USC 102(b) as being anticipated by

Allitt (USP 4,154,790).

Applicant believes that a slightly more limited version of claim 3 (plus claim 1) should be the basis of an independent claim that is both novel and unobvious over the prior art such as Allitt and Iverson. In particular, the term "guiding means" is replaced by the more limited term "guide rods", and the description "connecting the mold with each of the first and second segments" has been made more specific by changing it to "connect each of the first and second segments to a surrounding sidewall plate of the mold". These limitations are supported by the original claim 7. It can be determined from the description and drawings of Allitt that the elements 36 and 37 are "bolts" to hold springs in compression, not guide rods (column 4, lines 1-8). For guiding means, Allitt teaches the use of keys and keyways 42, 43, 44 (see Figs 3A, 3B and column 3, lines 24-36). Claim 3 is amended to place it in independent claim form by substantially copying the text of claim 1 into claim 3, replacing the original preamble line of claim 3. Grammatical changes are made to the verbs in the original clauses of claim 3 in order to make the clauses into objects of the preamble "characterized in that". Claim 1 is consequently cancelled, and claims 2 and 4 that previously depended from claim 1 are amended to depend from claim 3.

Applicant believes that the original claim 7 (plus claim 6) should be the basis of an independent claim that is both novel and unobvious over the prior art such as Allitt and Iverson. The original claim 7 cites the limitations on guide rods and sidewall connection that are discussed with reference to claim 3 above. Claim 7 is amended to place it in independent claim form by substantially copying the text of claim 6 into claim 7, replacing the original preamble line of claim 7. Grammatical changes are made to the verbs in the original clauses of claim 7 in order to make the clauses into objects of the preamble "characterized in that". Claim 6 is consequently cancelled, and claims 9, 12, 13 and 15 that previously depended from claim 6 are amended to depend from claim 7.

It should be noted that the unamended claim 8 describes an assembly of segments, sidewall plates, and guide bolts separated from springs, that is further patentably distinct from the prior art. For example, comparing Applicant's Figure 8 with Allitt's Fig. 2, Applicant's stop screw 262 is within a cavity 276 of the sidewall plate 202b and stops against a cavity wall 277; vs. Allitt's bolt 37 screwed into the sidewall plate 11 and having a head protruding radially inward for stopping radially inward movement of the segment 21.

It should be further noted that the unamended claim 9 describes a cam ring that is attached

to an axially-moving part of the mold press (i.e., the center post) in contrast with Allitt's cam that is attached to a diaphragm (13) as a source of axial movement. Applicant respectfully submits these limitations further patentably distinguish the present invention from the prior art. In particular, it is apparent that using the mold press center post to drive the outward movement allows much better control of radial motion and the timing of that motion compared to Allitt's use of an expanding diaphragm to press on a cam ring, thereby relying on a balance of spring forces and sticking forces versus generalized pressure in an expanding diaphragm.

Claims 16, 17, 18, and 20 have been combined in a new independent claim 21 described hereinbelow in order to best distinguish the claimed method from the prior art. As a consequence, claims 16, 17, 18, and 20 are cancelled, and claim 19 is amended to depend from claim 21. If the new independent claim 21 is an allowable independent claim, then the claim 19 that depends from claim 21 should also be allowable as further limitation on an allowed claim.

7. Claims 1-5 have been rejected under 35 USC 102(b) as being anticipated by Iverson (USP 1,989,363).

The changes detailed hereinabove also make the amended independent claim 3 novel and non-obvious over Iverson. In particular, Iverson also does not have guide rods and does not connect the ring segments to a surrounding sidewall plate. Instead, Iverson uses a flat mold press plate (12 in Figs. 6-9) and a non-radial bolt (28, 30) as a guiding means to restrict segment (23) movement to a radial direction; and the segments are connected to a spider (25) which is surrounded by the segments.

10. Claims 13-14 have been rejected under 35 USC 103(a) as being unpatentable over Allitt (USP 4,154,790).

Claim 13 is amended to further distinguish from the prior art such as Allitt. The limiting phrase "that is movably attached to the center post of the mold" is supported by the detailed description on page 11, lines 18-19. Allitt's upper bead molding rings (21) is attached to the sidewall plate ("upper part" 11). It is not obvious how Allitt's bead molding ring would be attached to the center post (27) if it were not retractable.

Applicant believes that the currently amended independent claim 7 is an allowable independent claim, therefore the claims such as claims 13-14 that depend from claim 7 should also be allowable as further limitations on an allowed claim.

New Claim

Claim 21 is a newly presented independent method claim. It is supported by the original claims 16, 17, 18, and 20 which are combined in this claim, and also by text copied from claims 13 and 14. For example, the second method step clause taken from the original claim 16 has been amended in claim 21 by adding text (underlined) from the original claim 14 as follows: "passing an unmolded first bead of the tire firstly over the second bead molding ring and secondly over the retractable first bead molding ring while the retractable first bead molding ring is retracted to an outside diameter that is less than or equal to the inside diameter of the unmolded first bead". In like manner, the first method step clause is a combination of claims 16, 20, and 13. The third method step clause is a combination of claims 18 and 16, and the final method step clause is substantially copied from claim 17.

Claim 21 presents a clearer picture of the novel features of the inventive method. For example, mold press axial movement is used to drive radial "expansion of the retractable first bead molding ring to engage the unmolded first bead", and an expanding vulcanizing membrane is used "to draw the second bead into engagement with the second bead molding ring". This contrasts with Allitt's use of an expanding membrane to cause engagement of the bead molding ring(s) with the tire bead(s), and not vice versa.

Conclusion

The undersigned Attorney of Record has made a sincere effort to amend the claims in response to the present Office Action. Favorable re-examination and consideration are respectfully requested.

Respectfully submitted,



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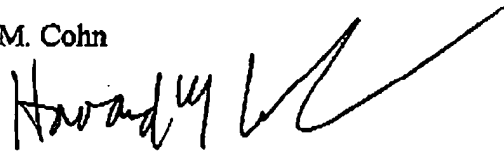
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